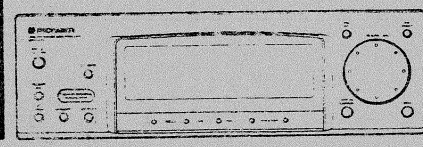
PIONEER
The Art of Entertainment

Service Manual



ORDER NO.
ARP2624

SOUND IMAGE CONTROLLER

GR-P730

GR – P 730 HAS THE FOLLOWING :

Type	Power Requirement	Remarks
AE	AC power supplied from power transformer's secondary of other system component	
AB		
AEWZIW		

- **This manual is applicable to GR – P 730/AE, AB and AEWZIW.**
- **For AB and AEWZIW types, refer to page 21.**
- **This product is a system(s) component.**
  This product does not function properly when independent : to avoid malfunctions, be sure to connect it to the prescribed system component(s), otherwise damage may result.
  This product's instructions are contained within the instructions manual of the related system component(s). The manual is packed with those component(s).

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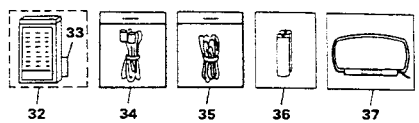
1. EXPLODED VIEWS, PACKING AND PARTS LIST

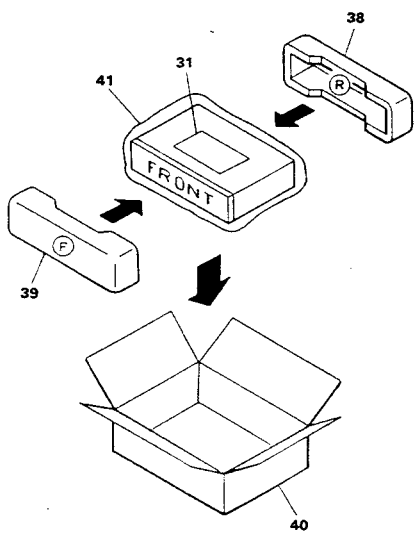
NOTES:

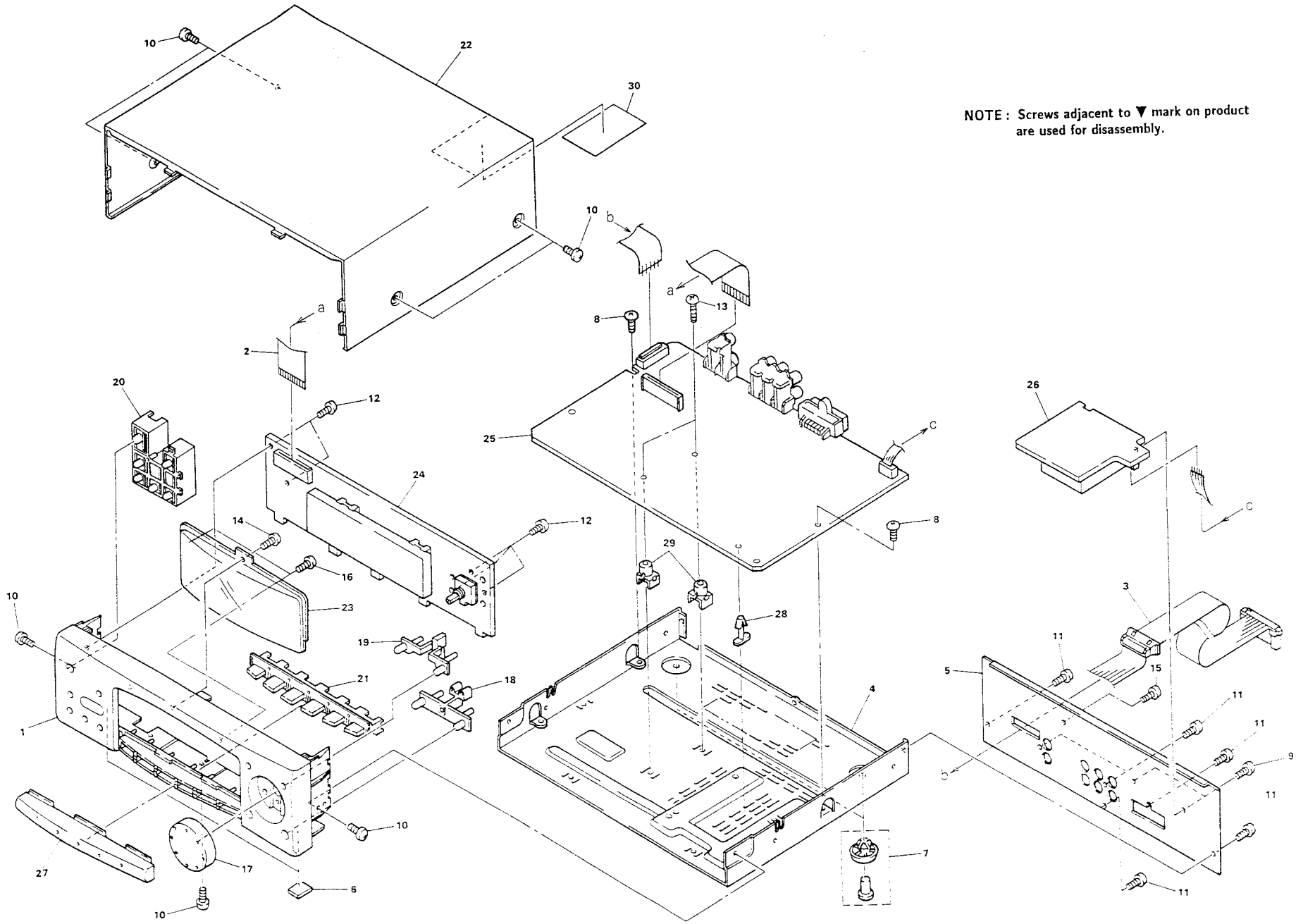
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

Mark	No.	Description	Parts No.
	1	FRONT PANEL(PLS)	AMB2057
NSP	2	J FLEXIBLE CABLE	ADD1111
	3	CORD WITH PLUG	ADE1116
NSP	4	CHASSIS	ANA1155
NSP	5	REAR PANEL	ANC1986
	6	RUBBER SHEET	AEB1111
	7	FOOT (RUBBER)	REC−434
	8	SCREW (STEEL)	ABA1011
	9	SCREW	BCZ30P080FZK
	10	SCREW	BBZ30P060FZK
	11	SCREW	BBZ30P080FZK
	12	SCREW	BPZ26P080FMC
	13	SCREW	VBZ30P140FMC
	14	SCREW	VPZ26P060FMC
	15	SCREW	VBZ35P080FMC
	16	SCREW	BPZ30P060FZK
	17	JOG KNOB(PLS)	AAB1293
	18	BAND BUTTON(PLS)	AAD2291
	19	IMAGE BUTTON(PLS)	AAD2297
	20	EFFECT BUTTON(PLS)	AAD2296
	21	HINGE BUTTON(PLS)	AAD2299
	22	BONNET(FE)	ANE1310
	23	PLATE(PLS)	AAK2318
◉	24	DISPLAY ASSY	AWZ4298
◉	25	PRE AMP ASSY	AWZ4315
◉	26	SUB POWER ASSY	AWZ4321
	27	PANEL SHEET(PLS)	AAK2447
NSP	28	PCB SPACER	AEC1371
NSP	29	PCB MOLD	AMR2115
NSP	30	BARRIER	AMR2509
	31	CAUTION CARD	ARH1105
	32	REMOTE CONTROL UNIT (CU−SX059)	AXD1319
	33	BATTERY COVER	AZN2195
	34	CORD WITH PLUG	ADE1115
	35	FM ANTENNA	ADH1005
NSP	36	BATTERY(R03,AAA)	AEX−021
	37	LOOP ANTENNA	ATB1006
	38	REAR PAD	AHA1490
	39	FRONT PAD	AHA1508
	40	PACKING CASE	AHD2371
	41	PACKING SHEET	AHG1093

• PACKING






NOTE : Screws adjacent to ▼ mark on product are used for disassembly.

2. SCHEMATIC AND PCB CONNECTION DIAGRAMS

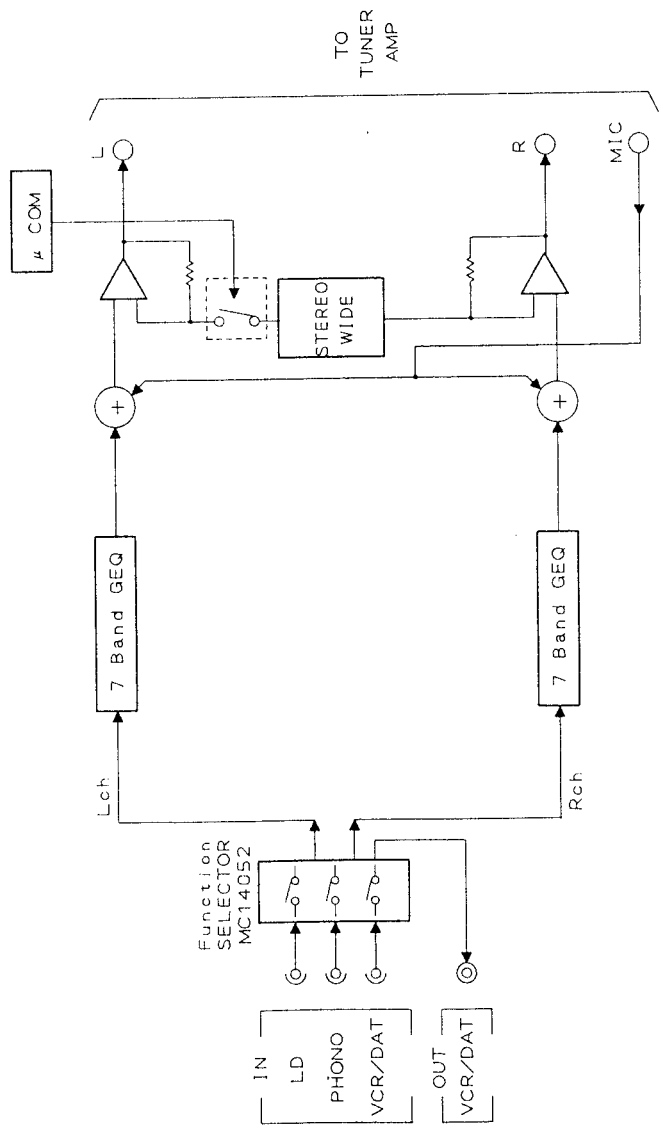
Note: (Type 2)

1. **When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".**
2. **Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.**
3. **RESISTORS:**
   Unit: k:kΩ, M:MΩ, or Ω unless otherwise noted.
   Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.
   Tolerance: (F): ±1%, (G): ±2%, (K): ±10%, (M): ±20% or ±5% unless otherwise noted.
4. **CAPACITORS:**
   Unit: p:pF or μF unless otherwise noted.
   Ratings: capacitor (μF)/ voltage (V) unless otherwise noted.
   Rated voltage: 50V except for electrolytic capacitors.
5. **COILS:**
   Unit: m:mH or μH unless otherwise noted.
6. **VOLTAGE AND CURRENT:**
   ⌐¬ : DC voltage (V) at no input signal unless otherwise noted.
   ⇨ mA or ← mA : DC current at no input signal unless otherwise noted.
7. **OTHERS:**
   - ➡ : Signal route.
   - ⊘ : Adjusting point.
   - ▼ (Red) : Measurement point.
   - The ⚠ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.
8. **SWITCHES** (Underline indicates switch position):

DISPLAY ASSY

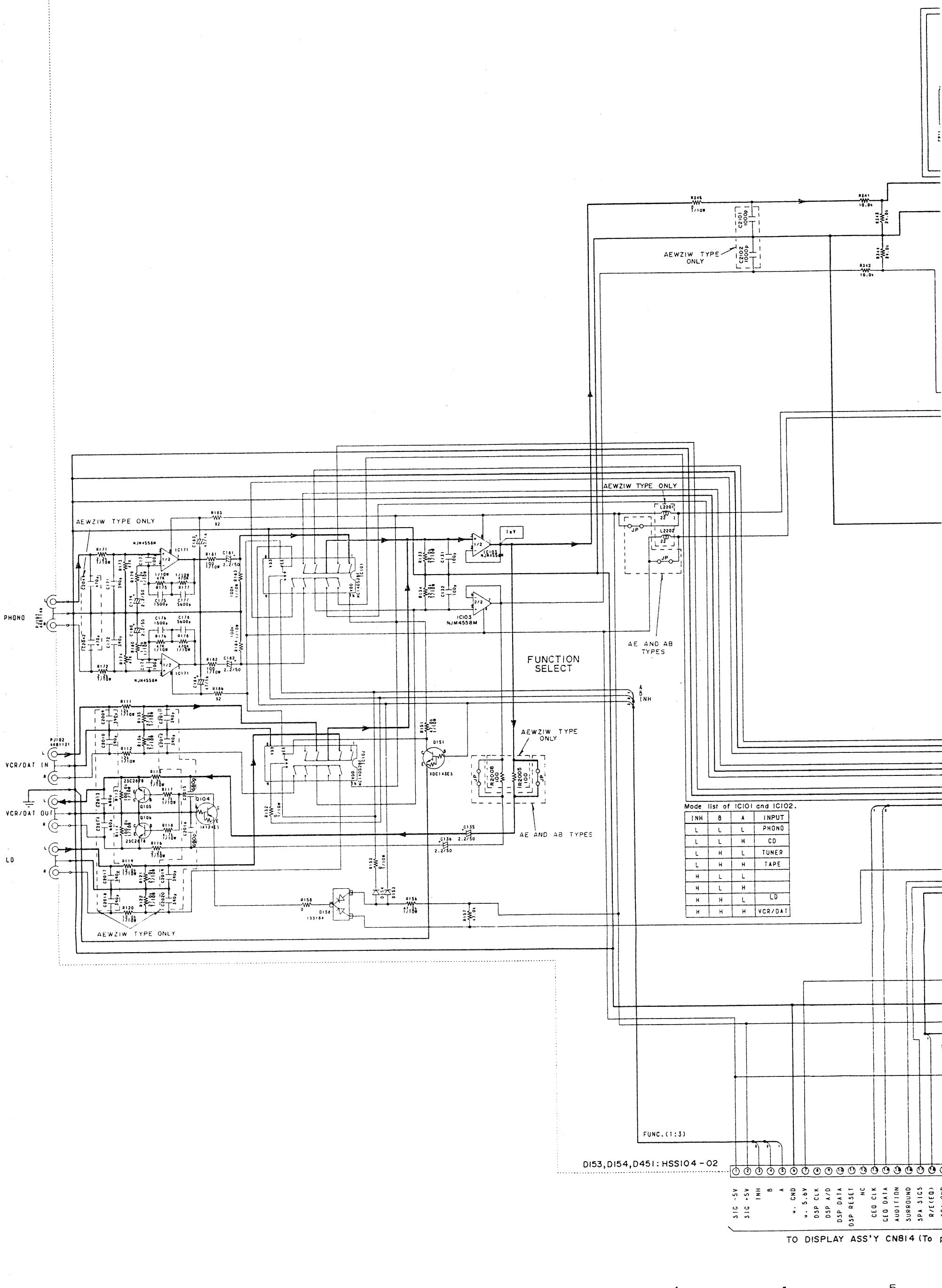
S 801 :	DISCO
S 802 :	(ST) LIVE
S 804 :	AI EQ
S 805 :	SURROUND
S 806 :	EFFECT ON/OFF
S 807 :	DISPLAY
S 808 :	MEMORY
S 809 :	PGM MODE
S 810 :	GEQ
S 811 :	AUDITION
S 812 :	HALL
S 813 :	LEFT
S 815 :	THEATER
S 816 :	RIGHT
S 817 :	SOUND JOG

2.1 BLOCK DIAGRAM



2.2 PRE AMP AND SUB POWER ASSY

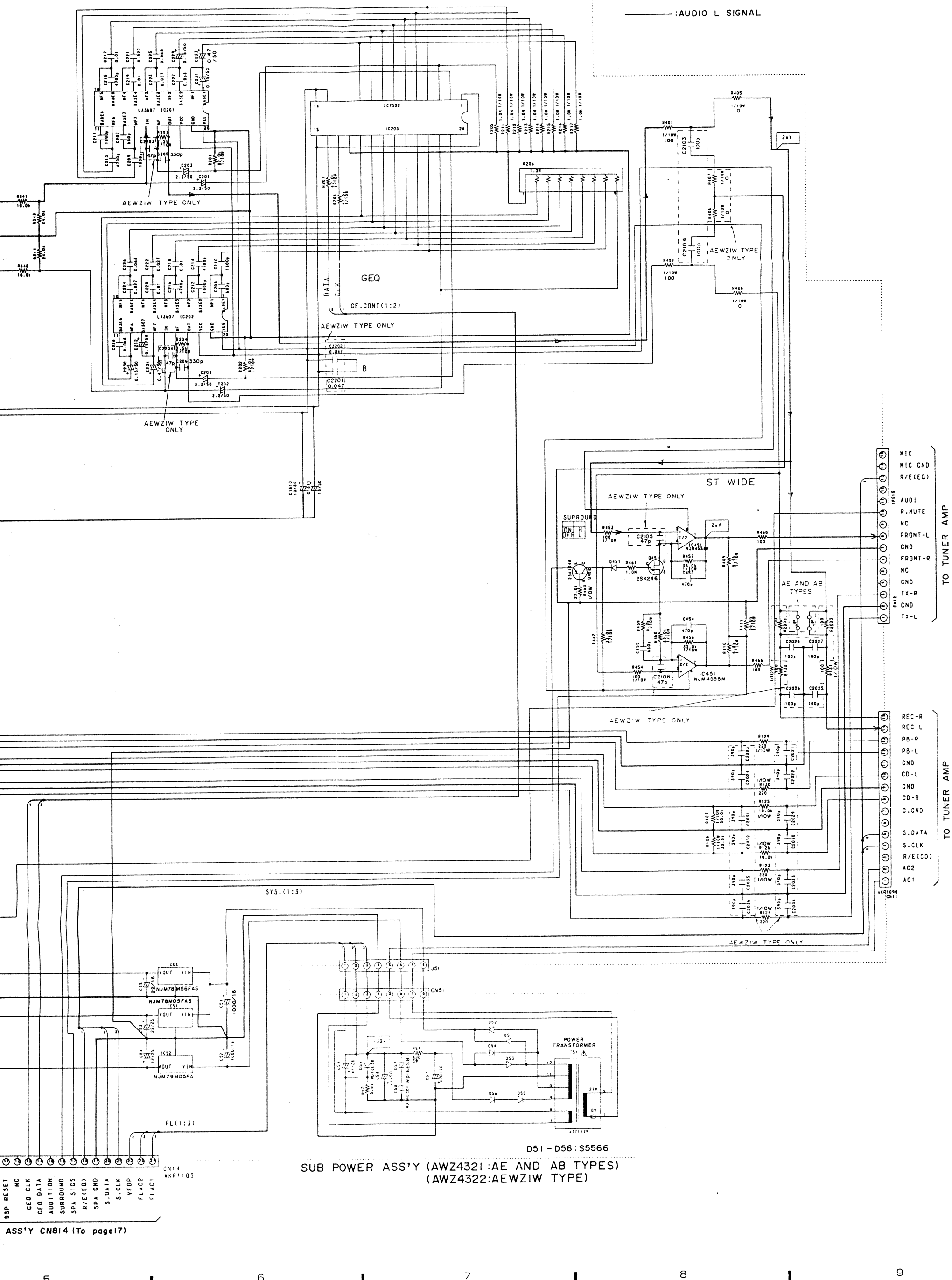
PRE AMP ASS'Y (AWZ4315 : AE AND AB TYPES)
(AWZ4316 : AEWZIW TYPE)



Mode list of IC101 and IC102.

INH	B	A	INPUT
L	L	L	PHONO
L	L	H	CD
L	H	L	TUNER
L	H	H	TAPE
H	L	L	
H	L	H	
H	H	L	LD
H	H	H	VCR/DAT

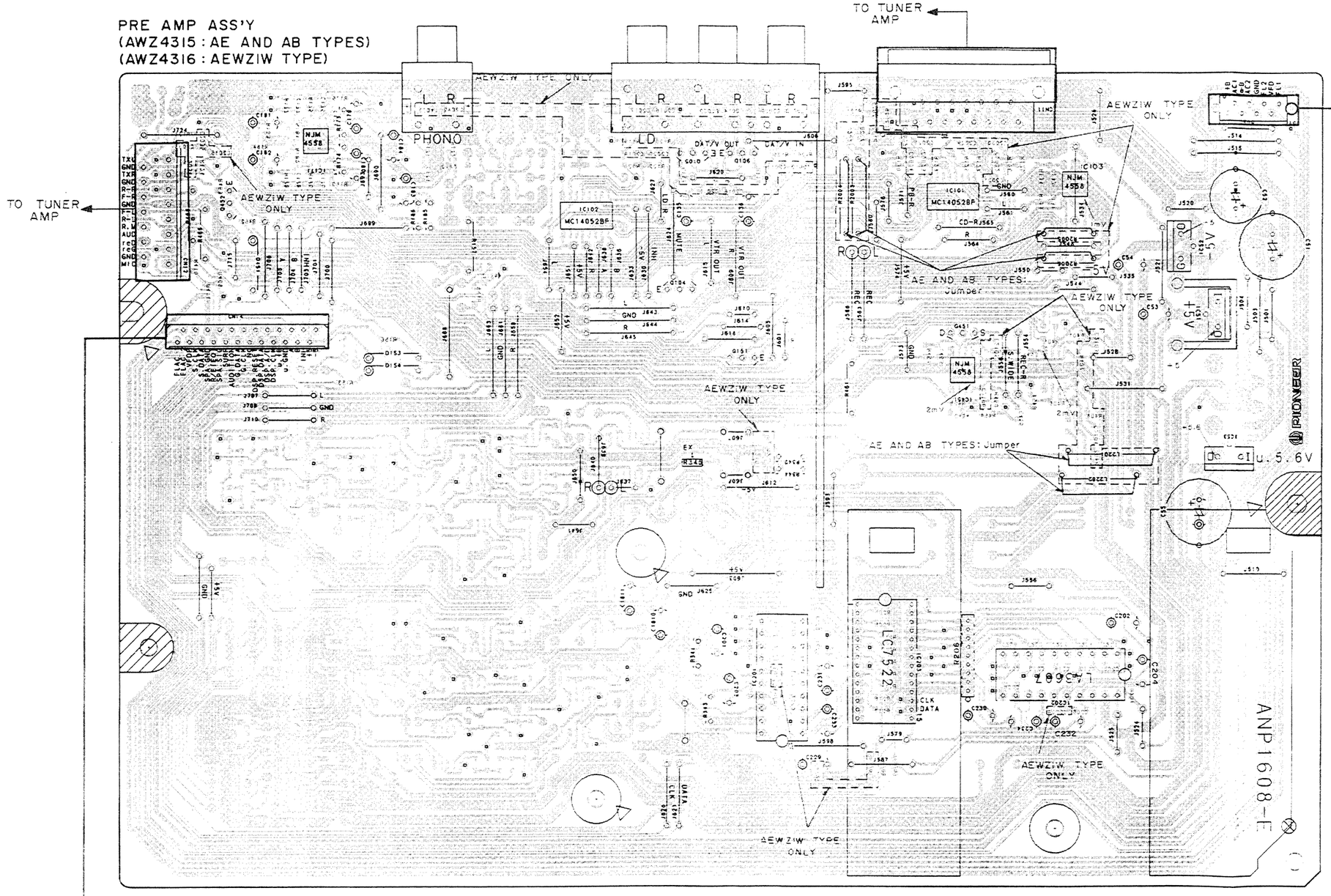
—— :AUDIO L SIGNAL



SUB POWER ASS'Y (AWZ4321 :AE AND AB TYPES)
(AWZ4322:AEWZIW TYPE)

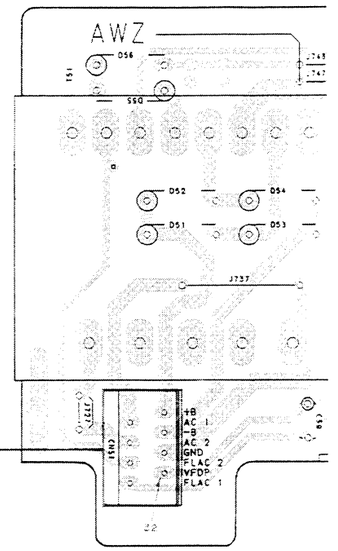
ASS'Y CN814 (To page17)

PRE AMP ASS'Y
(AWZ4315 : AE AND AB TYPES)
(AWZ4316 : AEWZIW TYPE)

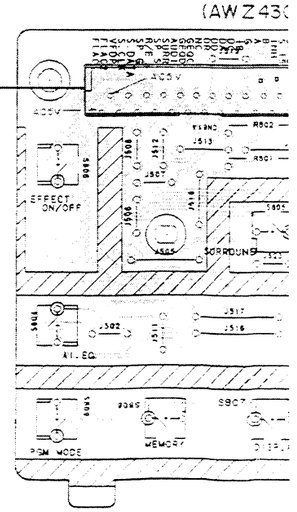


Q452 IC171 IC102 Q105 Q106 IC201 IC203 IC101 IC103 IC52 IC51
Q104 Q151 Q451 IC202 IC53
IC451

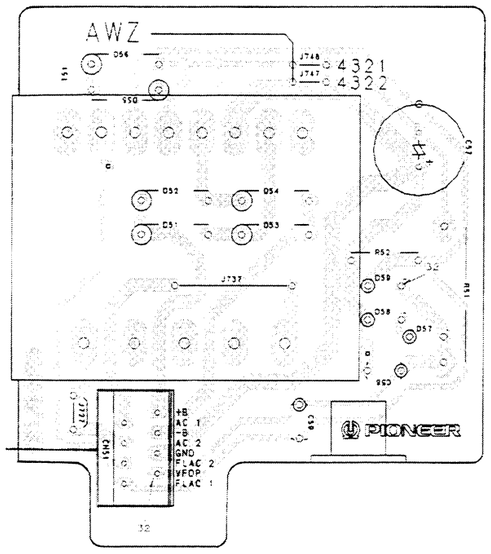
SUB POWER ASS'Y (AWZ43
(AWZ43



DISPLAY ASS'Y (AWZ42
(AWZ43



SUB POWER ASS'Y (AWZ4321 : AE AND AB TYPES)
(AWZ4322 : AEWZIW TYPE)



NOTE

1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wirng symbols listed in the following Table.

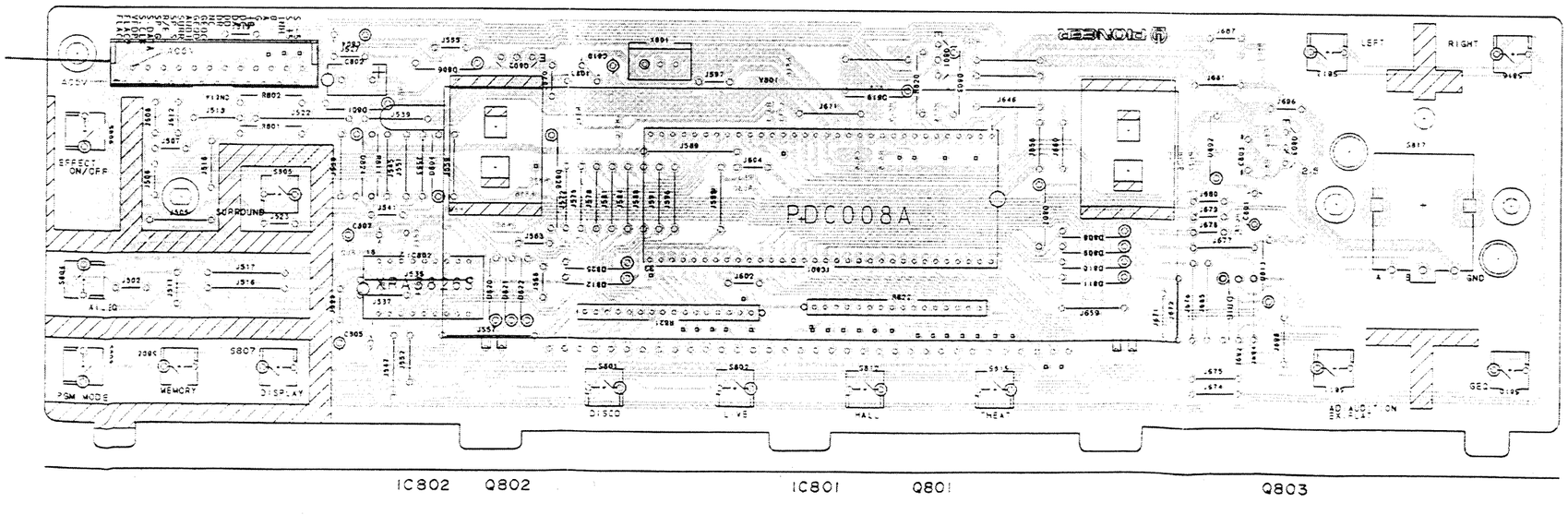
P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
Q504 (E)	or	Transistor
Q215	or	Radiator type transistor
D203	D203	Diode
R237	R237	Resistor
C513	+	Capacitor (Polarity)
C518		Capacitor (Non-polarity)

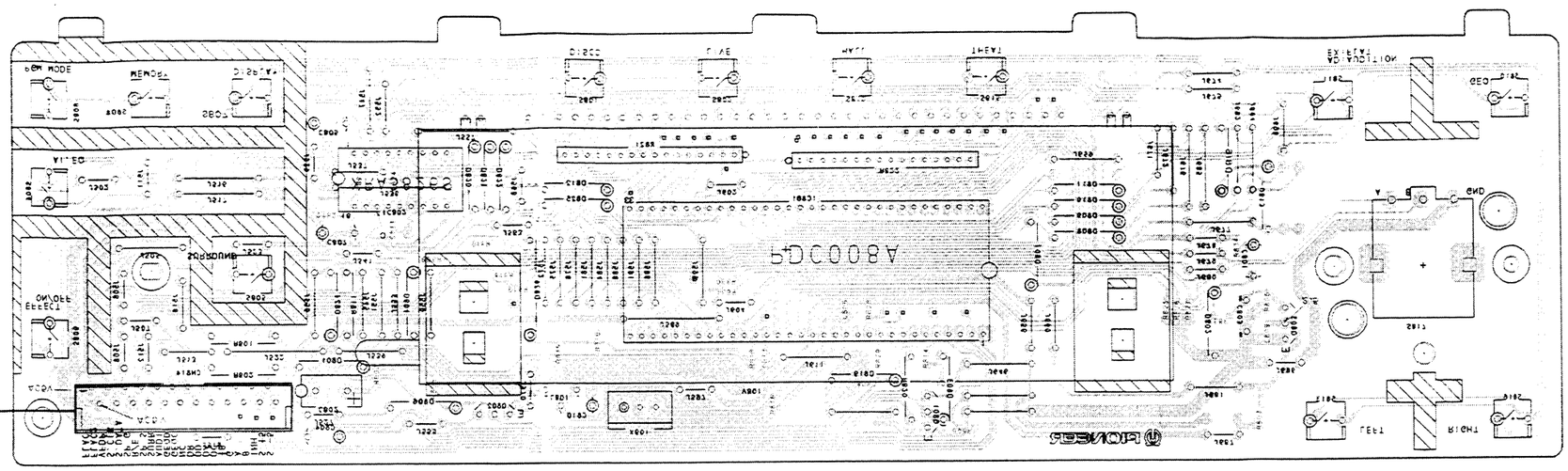
Others

P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

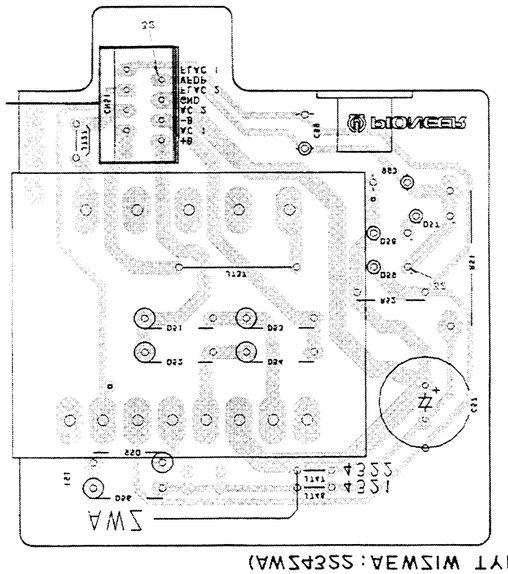
3. The capacitor terminal marked with ◌ (double circles) shows negative terminal.
4. The diode terminal marked with ◌ (double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.

DISPLAY ASS'Y (AWZ4298 : AE AND AB TYPES)
(AWZ4302 : AEWZIW TYPE)



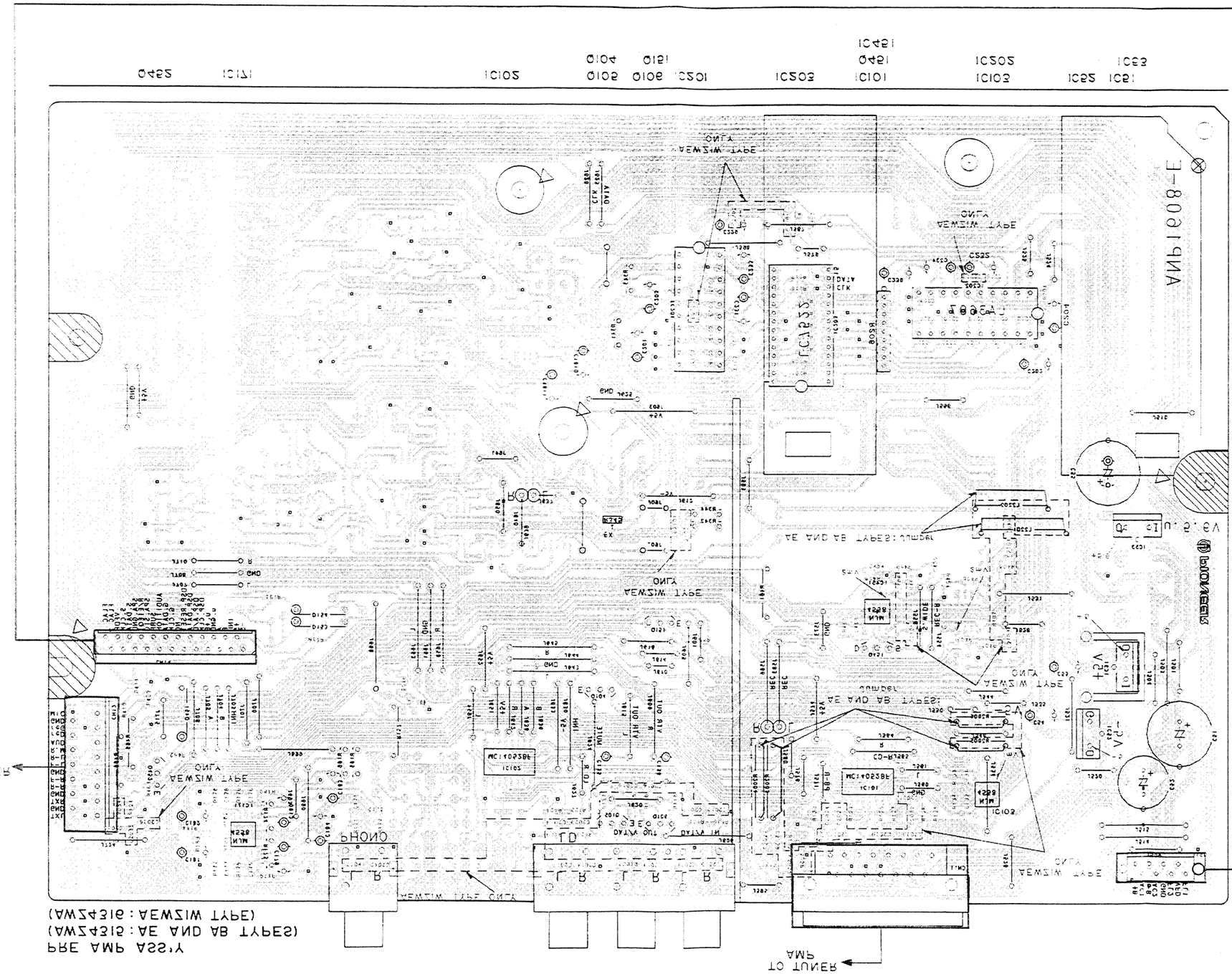


DISPLAY ASS'Y (AWZ4288:AE AND AB TYPES)
(AWZ4305:AEWZIW TYPE)

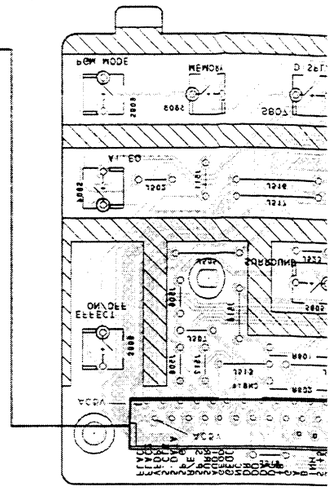


SUB POWER ASS'Y (AWZ4351:AE AND AB TYPES)
(AWZ4355:AEWZIW TYPE)

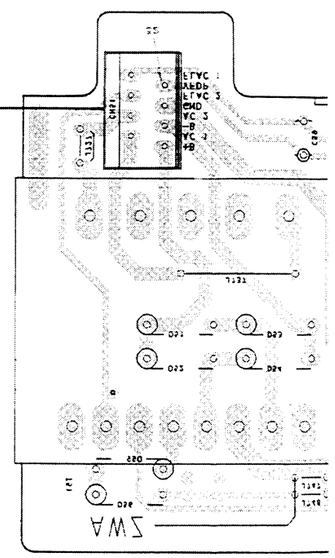
This P.C.B. connection diagram is viewed from the foil side.



PRE AMP ASSY
(AWZ4315 : AE AND AB TYPES)
(AWZ4316 : AEWZW TYPE)

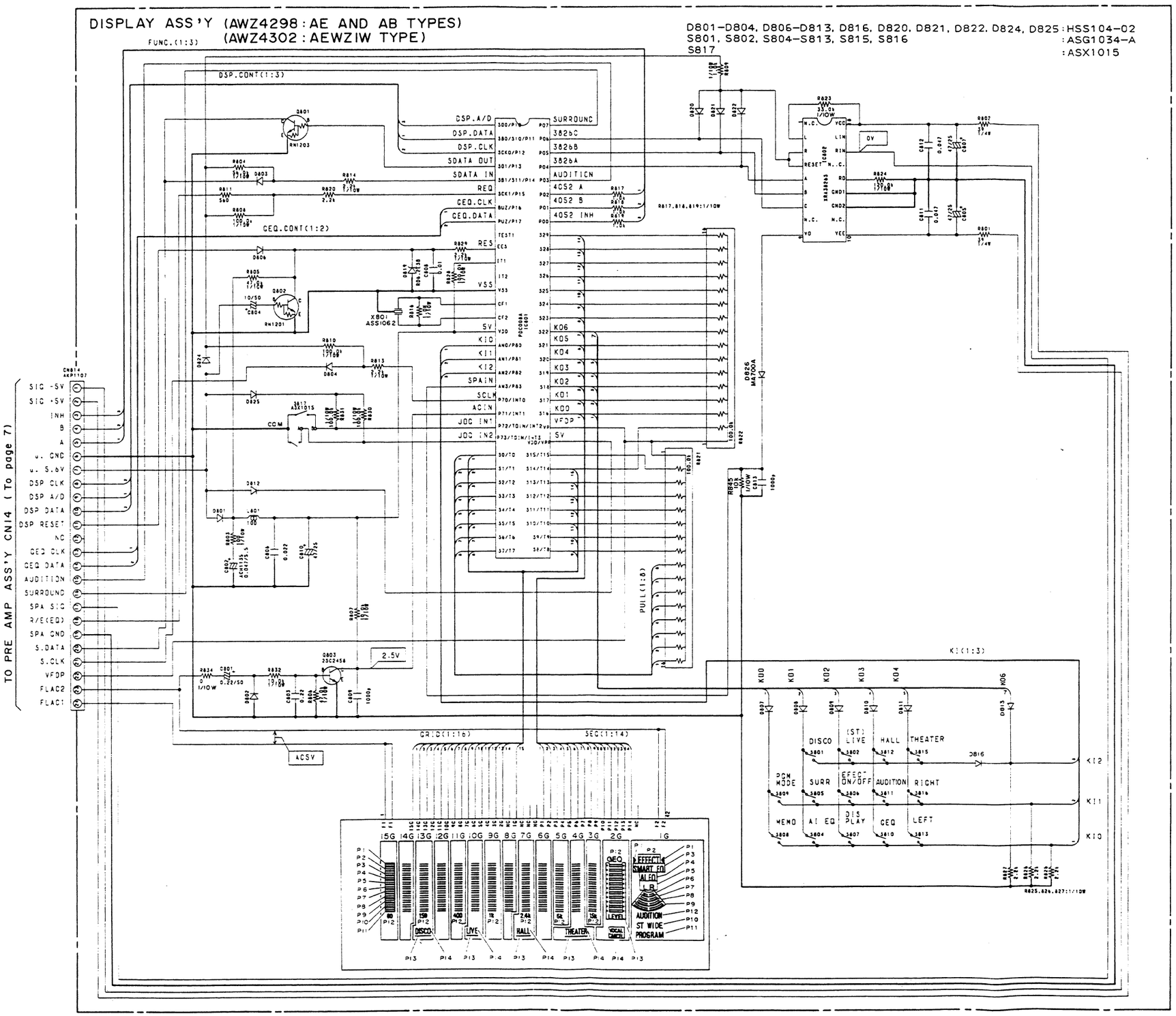


DISPLAY ASSY (AWZ4[illegible]
(AWZ4[illegible])



SUB POWER ASSY (AWZ4[illegible]
(AWZ4[illegible])

2.3 DISPLAY ASSY



3. PCB PARTS LIST

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω → 56 × 10¹ → 561	*RD1/8PM[5][6][1]J*
47kΩ → 47 × 10³ → 473	*RD1/4PS[4][7][3]J*
0.5Ω → 0R5	*RN2H[0][R][5]K*
1Ω → 010	*RS1P[0][1][0]K*

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ→ 562 × 10¹ →5621	*RN1/4PC[5][6][2][1]F*

Mark	No.	Description	Parts No.
	LIST OF ASSEMBLIES		
◉		DISPLAY ASSY	AWZ4298
◉		PRE AMP ASSY	AWZ4315
◉		SUB POWER ASSY	AWZ4321
	DISPLAY ASSY		
	SEMICONDUCTORS		
	IC801		PDC008A
	IC802		XRA3826S
	Q803		2SC2458
	Q802		RN1201
	Q801		RN1203
	D801–D804,D806–D813,D816, D820–D822,D824,D825		HSS104–02
	D826		MA700A
	D819		RD6.2ESB
	SWITCHES		
	S801,S802,S804–S813, S815,S816		ASG1034
	S817		ASX1015
	COIL		
	L801		LAU101K
	CAPACITORS		
	C802		ACH1135
	C804		CEAS100M50
	C805,C807,C810		CEAS470M25
	C801		CEASR22M50
	C803		CFTXA224J50
	C809,C813		CKSQYB102K50
	C808		CKSQYB103K50
	C806		CKSQYB223K50
	C811,C812		CKSQYB473K50
	RESISTORS		
	R821,R822		RA15T104J
	R801,R802		RD1/4PM390J
	R834		RS1/10S000J
	R803		RS1/10S101J
	R809,R817–R819		RS1/10S102J
	R807,R832,R845		RS1/10S103J
	R808,R810,R828, R830,R831		RS1/10S104J
	R816		RS1/10S105J
	R824		RS1/10S124J
	R813,R814,R825–R827, R829		RS1/10S222J
	R823		RS1/10S333J
	R805,R806		RS1/10S473J
	R804		RS1/10S563J
		Other Resistors	RD1/8PM□□□J
	OTHERS		
	X801	(12MHz)	ASS1062
	CN814	SOCKET(24P)	AKP1107
	V801	FL TUBE	AAV1176
	PRE AMP ASSY		
	SEMICONDUCTORS		
	IC201,IC202		LA3607
	IC203		LC7522
	IC101,IC102		MC14052BF
	IC103,IC171,IC451		NJM4558M–D
	IC51		NJM78M05FAS
	IC53		NJM78M56FAS
	IC52		NJM79M05FA
	Q452		2SA1048
	Q105,Q106		2SC2878
	Q451		2SK246
	Q104		XDA124ES
	Q151		XDC143ES
	D158		1SS184
	D153,D154,D451		HSS104–02
	CAPACITORS		
	C131,C132,C173,C174		CCSQCH101J50
	C171,C172		CCSQCH391J50
	C205,C206		CCSQSL331J50
	C1810,C1811		CEAS100M50
	C51,C52		CEAS102M16

Mark	No.	Description	Parts No.
	C55		CEAS220M16
	C135,C136,C179–C182, C201–C204		CEAS2R2M50
	C183,C184		CEAS470M16
	C229–C232		CEASR15M50
	C233,C234		CEASR47M50
	C53,C54		CEHAQ220M50
	C217–C220		CKSQYB103K50
	C175,C176		CKSQYB152K50
	C209–C212		CKSQYB182K50
	C221–C224		CKSQYB273K50
	C453,C454		CKSQYB471K50
	C213–C216		CKSQYB472K50
	C177,C178		CKSQYB562K50
	C207,C208,C455		CKSQYB681K50
	C225–C228		CKSQYF683Z50
	RESISTORS		
	R206	(1M)	RA8T105J
	R152,R153		RS1/10S000J
	R345		RS1/10S000J
	R405,R406		RS1/10S000J
	R131,R132,R181,R182,R453,R454		RS1/10S101J
	R401,R402		RS1/10S101J
	R125,R126		RS1/10S103J
	R113,R114,R183,R184		RS1/10S104J
	R205,R211–R217		RS1/10S105J
	R179,R180		RS1/10S122J
	R111,R112,R119,R120		RS1/10S123J
	R123,R124,R129,R130		RS1/10S221J
	R115,R116,R171,R172		RS1/10S222J
	R133,R134,R463		RS1/10S223J
	R121,R122,R135,R136		RS1/10S273J
	R127,R128		RS1/10S303J
	R457,R458,R462		RS1/10S333J
	R117,R118		RS1/10S472J
	R151,R156,R175,R176,R207,R208		RS1/10S473J
	R177,R178		RS1/10S474J
	R411		RS1/10S563J
	R409,R410		RS1/10S682J
	R203,R204		RS1/10S752J
	R459		RS1/10S822J
	R201,R202,R460		RS1/10S823J
	R158		RS1/8S000J
		Other Resistors	RD1/8PM□□□J
	OTHERS		
		PIN JACK(6P)	AKB1121
		PIN JACK(2P)	AKB1146
	CN11	SOCKET(15P)	AKP1090
	CN14	SOCKET(24P)	AKP1103
	CN12	CONNECTOR(15P)	KPE15
		SCREW	BBZ30P080FMC

Mark	No.	Description	Parts No.
	SUB POWER ASSY		
	SEMICONDUCTORS		
	D59		RD10ESB
	D57,D58		RD16ESB1
	D51–D56		S5566
	TRANSFORMER		
	T51		ATT1175
	CAPACITORS		
	C59		CEAS470M25
	C58		CEAS470M50
	C57		CEAS471M50
	RESISTORS		
	R52		RD1/2PM562J
	R51		RS3LMF821J
	OTHERS		
	CN51	CONNECTOR(8P)	KPE8

4. FOR AB AND AEWZIW TYPES

NOTES:
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- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

CONTRAST OF MISCELLANEOUS PARTS

GR-P730/AB, AEWZIW and AE have the same construction except for the following:

Mark	Symbol & Description	Part No.			Remarks
		AE type	AB type	AEWZIW type	
◉	PRE AMP assembly	AWZ4315	AWZ4315	AWZ4316	
◉	SUB POWER assembly	AWZ4321	AWZ4321	AWZ4322	
◉	DISPLAY assembly	AWZ4298	AWZ4298	AWZ4302	
NSP	Rear panel	ANC1986	ANC1985	ANC1986	
	FM antenna	ADH1005	AHD1005	ADH1002	

PRE AMP ASSEMBLY

AWZ4316 and AWZ4315 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		AWZ4315	AWZ4316	
	L2201, L2202	.....	LAU220K	
	C2009–C2012, C2017–C2024, C2029–C2036	.....	CCSQCH391J50	
	C2013–C2016	.....	CKSQYB681K50	
	C2025–C2028, C2103, C2104	.....	CCSQCH101J50	
	C2041, C2042	.....	CCSQSL471J50	
	C2101, C2102	.....	CKSQYB102K50	
	C2105, C2106, C2203, C2204	.....	CCSQCH470J50	
	C2201, C2202	.....	CKSQYB473K50	
	R407, R408	.....	RS1/10S000J	
	R2003–R2006	.....	RD1/8PM101J	

SUB POWER ASSEMBLY

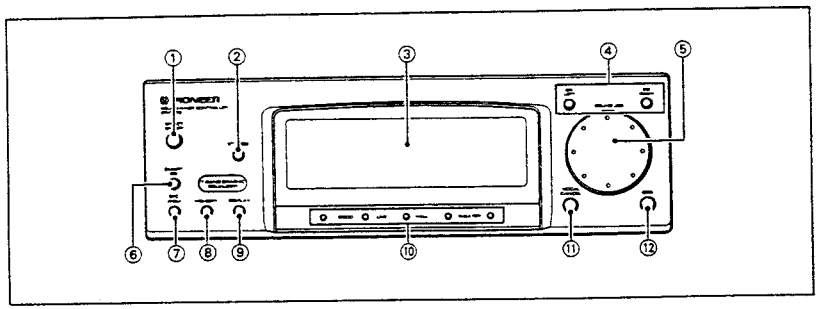
Although AWZ4322 and AWZ4321 are different in part number, they have the same service parts.

DISPLAY ASSEMBLY

Although AWZ4302 and AWZ4298 are different in part number, they have the same service parts.

5. PANEL FACILITIES

FRONT PANEL FACILITIES



① **EFFECT ON/OFF button**
Pressing this button to ON allows you to select sound fields and adjust the effects. When the button is set to OFF, the sound source is reproduced without modification.

② **Stereo wide button (ST WIDE)**
When this button is set to ON, playback sounds are given an additional sense of presence and fullness.

③ **Display**

④ **Equalizer left, equalizer right buttons (EQ LEFT, EQ RIGHT)**
Use these buttons to adjust the sound. Move the cursor (flashing light) to the position to be adjusted.

⑤ **SOUND JOG dial**
Use to adjust the strength of sound-field effects or the sound quality.

⑥ **SMART equalizer button (SMART EQ)**
When this button is set to ON, the sound will be automatically augmented in accordance with the source, in order to allow the modified sound field effects to be reproduced with optimum results.

⑦ **SFC mode/program button (SFC/PGM)**
Use this button to select a memory position that you have created or other desired position. SFC stands for "Sound Field Control".

⑧ **MEMORY button**
Press to save a personally created sound field.

⑨ **DISPLAY button**
Each time this button is pressed, the items shown on the display change.

⑩ **Sound field mode buttons (DIS[illegible] LIVE, HALL, THEATER)**
Use these buttons to select the desired sound field.

⑪ **FLAT button (U.K., European models only)**
When this button is set to ON, the sound quality becomes flat.
This effect is the same as when the sound is not adjusted.

⑫ **Graphic Equalizer button (GEQ)**
Use this button to turn the graphic equalize[illegible]ON/OFF. The display's GEQ indicator lights when t[illegible] graphic equalizer is on, and disappears when the graphic equalizer is off.

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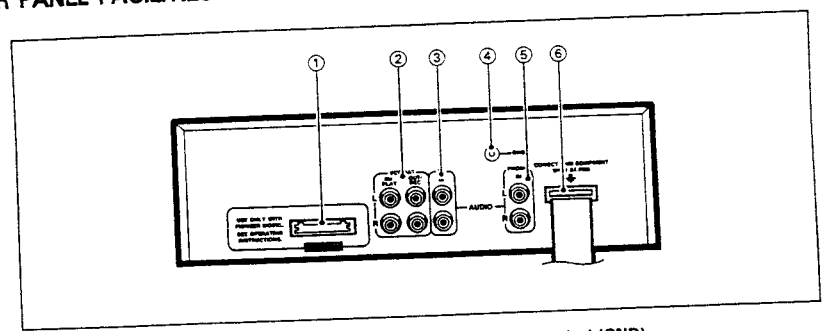
REAR PANEL FACILITIES



① **SYSTEM jack**
Connect the system cable here.

② **VCR/DAT jacks**
IN/PLAY:
Connect to the audio output jacks of VCR (DAT).
OUT/REC:
Connect to the audio input jacks of VCR (DAT).

③ **LD input jacks**
Connect to the audio output jacks of LD player.

④ **Ground terminal (GND)**
Use a screwdriver to connect your turntable's ground wire to this ground terminal.

⑤ **PHONO input jacks**
Connect the output cable of the turntable to these jacks.

⑥ **SOUND FIELD PROCESSOR (or SOUND IMAGE CONTROLLER) system cable**
Connect to the SOUND PROCESSOR (or SOUND CONTROLLER) jack of the receiver.

6. SPECIFICATIONS

Central frequencies ..... 60 Hz, 150 Hz, 400 Hz, 1 kHz, 2.4 kHz, 6 kHz, 15 kHz
Maximum range of variation ..... ±7 dB

Spectrum Analyzer Section
Central frequencies ..... 60 Hz, 150 Hz, 400 Hz, 1 kHz, 2.4 kHz, 6 kHz, 15 kHz
External dimensions ..... 260 (W) × 84 (H) × 246 (D) mm
Weight ..... 2.2 kg